



**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
ENGINEERING AND COMPLIANCE DIVISION**

**Coating, Printing, Aerospace & Metal Finishing Team**

**PERMIT APPLICATION EVALUATION**

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Processed by WW  
Reviewed by SMKE

Date 1/29/13

**P/C to P/O**

Lithographic Printing Press IR

**Applicant's Name:** *Lithographix, Inc*  
**Facility ID:** 139799  
**Mailing Address:** 12250 Crenshaw Blvd, Hawthorne, Ca 90250  
**Equipment Address:** 12250 Crenshaw Blvd, Hawthorne, Ca 90250

**EQUIPMENT DESCRIPTION**

**A/N 513562 (P/C to P/O)**

*Identical Replacement for Press M6, A/N 431032, PO F78612*

*LITHOGRAPHIC PRINTING PRESS M10, MITSUBISHI, MODEL 3000LS, SERIAL NUMBER 4472, 8 COLOR PLUS COATER, 40 INCH SHEET WIDTH, WITH A REFRIGERATED CHILLER, INFRARED LAMPS, 43 KW TOTAL, AND UV LAMPS, 129 KW TOTAL.*

**Conditions:**

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THIS EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH RULES 1130 AND 1171.
4. THE FOUNTAIN SOLUTION USED IN THIS EQUIPMENT SHALL NOT CONTAIN MORE THAN EIGHT PERCENT (8%) BY VOLUME OF VOLATILE ORGANIC COMPOUNDS (VOC), AS APPLIED, INCLUDING WATER AND EXEMPT SOLVENTS.
5. THE TOTAL QUANTITY OF VOC EMISSIONS FROM THIS FACILITY SHALL NOT EXCEED 9,750 POUNDS IN ANY ONE CALENDAR MONTH. (FAC CONDITION)
6. IN ADDITION TO THE RECORDKEEPING REQUIREMENTS IN RULE 109, THE OPERATOR SHALL KEEP ADEQUATE RECORDS FOR THE EQUIPMENT TO VERIFY THE FOLLOWING ON A DAILY BASIS:
  - A. DENSITY OF INK, IN POUNDS PER GALLON.
  - B. PERCENTAGE BY WEIGHT OF LITHOGRAPHIC OILS IN EACH INK.
  - C. THE INK ABSORPTION FACTOR AS SPECIFIED BY CURRENT SCAQMD GUIDELINES.



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- D. VOC CONTENT OF FOUNTAIN SOLUTION, WASH MATERIALS, AND ANY OTHER VOC CONTAINING MATERIAL, IN POUNDS/GALLON AS APPLIED, INCLUDING WATER AND EXEMPT COMPOUNDS.
  - E. THE VOC EMISSIONS FROM THE UV CURABLE INKS AND COATINGS SHALL BE CALCULATED USING THE APPROPRIATE VOC EMISSION FACTOR DETERMINED PURSUANT TO THE APPROPRIATE CURRENT DISTRICT APPROVED TEST METHOD. IN CASE NO LABORATORY TESTED EMISSION FACTOR IS AVAILABLE, THEN AN EMISSION FACTOR OF 0.02 POUND OF VOC PER POUND OF INK/COATING APPLIED SHALL BE USED.
  - F. DAILY VOC EMISSIONS IN POUNDS.
  - G. OTHER DATA AS REQUIRED TO VERIFY COMPLIANCE WITH THE CONDITIONS SPECIFIED IN THIS PERMIT.
- 7. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE 1 WITH AN EFFECTIVE DATE OF JUNE 5, 2009 OR EARLIER WITH THE EXCEPTION OF ISOPROPYL ALCOHOL (CAS# 67-63-0), AMMONIA (CAS# 7664-41-7), O-XYLENE (CAS# 95-47-6) AND ETHYLENE GLYCOL MONOBUTYL ETHER (EGBE) (CAS# 111-76-2).
  - 8. MATERIAL SAFETY DATA SHEETS FOR ALL MATERIALS USED AT THIS FACILITY AND SUBJECT TO DISTRICT RULES SHALL BE KEPT CURRENT AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST. (FAC CONDITION)
  - 9. PERMIT SHIELD: NOT WITHSTANDING THE OTHER REQUIREMENTS AND CONDITIONS IN THIS PERMIT, THIS EQUIPMENT IS NOT SUBJECT TO THE FOLLOWING RULE REQUIREMENTS:

RULE 1128 - VERSION DATED 3/8/96

COMPLIANCE WITH THE CONDITIONS OF THIS TITLE V PERMIT SHALL BE DEEMED IN COMPLIANCE WITH ANY REGULATORY REQUIREMENTS APPLICABLE AS OF THE DATE OF PERMIT ISSUANCE TO THIS EQUIPMENT, PROVIDED THAT SUCH REGULATORY REQUIREMENTS ARE INCLUDED AND SPECIFICALLY IDENTIFIED IN THIS PERMIT. NOTHING IN THIS PERMIT OR IN ANY PERMIT SHIELD CAN ALTER OR AFFECT: (a) UNDER SECTION 303 OF THE FEDERAL CLEAN AIR ACT, THE PROVISIONS FOR EMERGENCY ORDERS; (b) THE LIABILITY OF THE OPERATOR FOR ANY VIOLATION OF APPLICABLE REQUIREMENTS PRIOR TO OR AT THE TIME OF PERMIT ISSUANCE; (c) THE APPLICABLE REQUIREMENTS OF THE ACID RAIN PROGRAM; (d) THE ABILITY OF EPA TO OBTAIN INFORMATION FROM THE OPERATOR PURSUANT TO SECTION 114 OF THE FEDERAL CLEAN AIR ACT; (e) THE APPLICABILITY OF STATE OR LOCAL REQUIREMENTS THAT ARE NOT "APPLICABLE REQUIREMENTS", AS DEFINED IN RULE 3000, AT THE TIME OF PERMIT ISSUANCE BUT WHICH DO NOT APPLY TO THE FACILITY, SUCH AS TOXICS REQUIREMENTS UNIQUE TO THE STATE; OR (f) THE APPLICABILITY OF REGULATORY REQUIREMENTS WITH COMPLIANCE DATES AFTER THE PERMIT ISSUANCE DATE. THIS PERMIT SHIELD SHALL NOT APPLY TO ANY OPERATIONAL CHANGE MADE PURSUANT TO THE OPERATIONAL FLEXIBILITY PROVISIONS OF DISTRICT RULE 3005.

## **BACKGROUND**

A/N 513562 was submitted on 8/4/10 for a new Mitsubishi M10 press to replace the existing Mitsubishi M6 eight-color press under A/N 431032, PO F78612. Permit to Construct was issued on March 8, 2011. The M10 printing press was installed and is now fully operational according to



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permit requirements therefore a permit to operate will now be issued. The M6 press has been removed and the P/O will be inactivated upon approval of this P/O. The equipment operates under the existing facility-wide VOC emission limit of 9,750 lb/month. Therefore, this project did not result in any emission increase from the facility. Based on the last inspector's report, the facility emissions were 6287 lb VOC/month, below the facility cap. There was no equipment cap for the replaced press. There were no combustion contaminants since the dryer is electric (IR & UV). Lithographix is a commercial lithographic printing shop. They produce mostly reports, inserts, magazines, brochures, calendars, and other printed articles.

Lithographix is a Title V facility. The Title V permit was renewed on May 11, 2010 and this is the second revision to the renewal. The proposed project is considered as an "administrative permit revision" to the renewed Title V permit, as described in the Regulation XXX evaluation. This administrative revision will be included with the de minimus significant revision under A/N 513409 to add seven inkjet printers under separate evaluation.

The District compliance data base showed NOV P57957 dated 5/31/11 for failure to submit forms 500-ACC and SAM reports. The company is now in compliance.



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## PROCESS DESCRIPTION

The facility uses the lithographic printing process on paper substrate. Lithographic printing is also called offset printing and is the most popular of the four major printing processes. Lithography uses the planographic method. The image and non-printing areas are essentially on the same plane of a thin metal plate and the distinction between them is maintained chemically. Printing is from a plane or flat surface and there are two differences between offset lithography and other processes;

1. It is based on the principle that grease and water do not mix and
2. Ink is offset first from the plate to a rubber blanket and then from the blanket to the paper.

When the printing plate is made the printing image is rendered grease receptive and water repellent while the non-printing areas are rendered water receptive and ink repellent. On the press the plate is mounted on the plate cylinder which as it rotates comes into contact successively with rollers wet by ink. The dampening solution wets the non-printing areas of the plate and prevents the ink from wetting these areas. The ink wets the image areas that are transferred to the intermediate blanket cylinder. The paper picks up the image as it passes between the blanket cylinder and the impressive cylinder.

## EMISSION CALCULATIONS

The facility operates under an emission cap of 9,750 lbs/month of VOC. The installation of this equipment did not result in any facility emission increase. VOC emissions were calculated and summarized below.

MaxVOC R1 = R2 = 68 lb/day  
30-day AVG = 50 lb/day

Operating schedule: 24 hrs/day, 6 days/wk, 52 wks/yr (max)

## RULE EVALUATION

**RULE 212(c)(1)** *This section requires a public notice for all new and modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school.*

Since there are no schools within 1,000 feet of the facility, public notice was not required.



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**RULE 212(c)(2)&(g)** *This section requires a public notice for any new and modified equipment or facility which have an on-site emission increase exceeding any of the daily maximums specified in subdivision (g).*

This is a functionally identical replacement. There is no emission increase from the facility due to this project. The new press has the same emissions as the replaced press. Public notice not required.

**RULE 212(c)(3)** *This section requires a public notice for all new or modified permit units with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulted in MICR greater than  $1E^{-6}$  per permit unit or greater than  $10E^{-6}$  per facility.*

There are no carcinogenic compound emissions from this project. A small amount of toxic contaminants (acute and chronic) listed in Rule 1401 as amended 6/05/09 can be emitted; however, the calculations show that the proposed project complies with all applicable R1401 requirements (HIA/HIC < 1). Public notice not required.

**RULE 401** Visible Emissions

Visible emissions are not expected with proper maintenance and operation of this equipment. The system shows no visible emissions complaints in the last two years.

**RULE 402** Nuisance

Operation of this equipment is not expected to create complaints or nuisance with proper maintenance and operation. The system shows no nuisance complaints in the last two years.

**RULE 1130** Graphic Arts

This operation complies with the VOC content requirements. The new press has a chilled fountain.

<b>Material</b>	<b>Rule 1130 VOC Limit</b>	<b>Actual VOC Content*</b>
Fountain Sol'n	100 g/l (0.83 lb/gal) of material	0.2 lb/gal of material
Inks	300 g/l (2.5 lb/gal) of coating	0.75-1.56 lb/gal of coating

\*based on inspector's report 3/15/2012



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***RULE 1171 Solvent Cleaning Operations***

This operation complies with the VOC content requirements.

<i>Material</i>	<i>Rule 1171 VOC Limit</i>	<i>Actual VOC Content*</i>
Blanket/RollerWash	100 g/l (0.83 lb/gal)	0.83 lb/gal
UV Wash	100 g/l (0.83 lb/gal)	0.83 lb/gal

\*based on inspector's report 3/15/2012

***REG XIII Rule 1303(a), Best Available Control Technology (BACT)***

BACT is met by use of fountain solution with less than 8% by volume of VOC and low VOC content washes  $\leq$  100 g/l.

<b>Material Fountain Solution (FS)</b>	<b>VOC Content (lb/gal)</b>	<b>Usage (gal/day)</b>	<b>Total VOC (lb/day)</b>	<b>Total VOC (gal/day)</b>
SF94	0.20	0.938	0.19	0.027
HT238 Alc Subs	6.30	1.328	8.37	1.195
Water	0.00	20.00	0.00	0.000
<b>TOTAL</b>		<b>22.27</b>	<b>8.55</b>	<b>1.22</b>

	(a)	(b)	(c)	(d)	
Assume density of FS as mixed =				7	lb/gal
VOC lbs/gal as applied (divide c/b ) =				0.384	lb/gal
VOC content of the fountain sol'n as applied (g/l)=				46.02	gms/liter.
The volume % of VOC in the fountain sol'n as applied =				5.49	< 8 %, complies w/ BACT

***Rule 1303 (b)(1), Modeling***

Modeling is not required for VOC.

***Rule 1304 (c)(1), Offsets Exemption***

Offsets are not required since there is no emission increase from the facility. The company operates under the same facility permit condition of 9,750 lbs/month of VOC.

***RULE 1401 New Source Review of Toxic air Contaminants***

There is small amount of toxic contaminants listed in Rule 1401 as amended 6/5/09 from the new press. However there are no carcinogenic compounds



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present; the acute and chronic compound emissions summarized below. Tier 2 analysis was performed and both the chronic and the acute commercial and residential hazard indices are less than one.

Materials	Usage gal/day	VOC lb/gal	Density lb/gal	EF Calc	Emissions VOC lb/day	Toxic Cpd.	Toxic Wt %	Toxic Emissions	
								lb/day	lb/hr
<b>Coating</b>									
UV gloss	60.0	0.47	9.09		28.2	o-xylene	2%	10.91	0.455
Starkote 3025,366	75.0	0.2	8.65		15.0	IPA	2%	12.98	0.541
						Ammonia*	2%	6.3	0.26
<b>Inks</b>									
UV inks	31.0	0.225	11.26	0.01	0.3	o-xylene	2%	6.98	0.291
Process inks	70.0	1.35	8.51	0.01	0.6	o-xylene	2%	11.91	0.496
* Ink absorption factor 95%									
* Emission factor = (1-.95) X density X wt %									
<b>Fountain Solution</b>									
Starfount SF94	0.9	0.2	8.80		0.2				
HT238 alcoh Subst	1.3	6.3	7.80		8.2	EGBE	10%	1.01	0.04
<b>Clean-up Solvent</b>									
Blanket Wash	1.25	0.75	7.22		0.9	EGBE	10%	0.90	0.04
QUV Wash	1.5	0.77	7.50		1.2				
Roller wash	2.5	0.80	8.60		2.0	EGBE	10%	2.15	0.05
<b>Total VOC (lbs/day)</b>					<b>55</b>				

\*The aqueous resin compound (Starkote 3025 & 366) contains a maximum of 2% ammonium hydroxide. Assuming the worst scenario:

2% of 75 gal/day X 8.65 lb/gal = 12.97 lb/day NH<sub>3</sub>

MW: NH<sub>3</sub> = 17, NH<sub>4</sub>OH = 35

[12.97 (17/35) lb/day] = 6.3 lb/day / [day/24 hrs] = 0.26 lb/hr

NH<sub>3</sub> = 0.26 lb/hr

TAC	CAS	Chronic	Acute	Emissions lb/hr
IPA	67-63-0	X	X	0.541
NH <sub>3</sub>	7664-41-7	X	X	0.26
O-xylene	95-47-6	X	X	1.24
EGBE	111-76-2		X	0.13

**REG XXX**

This equipment was previously issued a Permit to Construct and was included in the Title V facility permit issued March 8, 2011. Since the equipment replacement is completed, a Permit to Operate is recommended for the new lithographic printing press M10. Pursuant to Rule 3000(b)(1)(D), issuance



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of a final Permit to Operate for equipment previously issued a Title V Permit to Construct is considered as an administrative Title V Permit Revision. This is the (2<sup>nd</sup>) revision since the Title V renewal was issued on May 11, 2010. This administrative revision will be included with the de minimis significant revision under A/N 513409 to add seven previously 219 exempt inkjet printers. As part of this revision, the permit for the replaced press under A/N 431032 (P/O F78612) will be removed from Section D as this equipment has been removed and is no longer operating at this facility. In addition, another press Mitsubishi GCX under A/N 431033 (P/O F78613) has been removed so will be removed from Section D. The permit is already inactive. The following table summarizes the cumulative emission increases resulting from all permit revisions since the Title V renewal was issued:

<b>Revisions</b>	<b>HAP</b>	<b>HAP</b>	<b>VOC</b>	<b>NOx</b>	<b>PM<sub>10</sub></b>	<b>SOx</b>	<b>CO</b>
1 <sup>st</sup>	Replacement of litho press under A/N 431032 with new press under A/N 513552 & removal of litho press under A/N 431028.	0	0	0	0	0	0
2 <sup>nd</sup>	Add 7 inkjets (A/Ns 500173, 500178, 500180, 500181, 500184, 500185 & 500186) & removal of litho web press under A/N 431033 (P/O F78613)	0	0	0	0	0	0
	Administrative – P/C to P/O for litho press M10 (A/N 531562) & remove replaced M6 press under A/N 431032 (P/O F78609)						
Cumulative Total since Renewal (5-14-09)		0	0	0	0	0	0
Maximum Daily Limit		30	30	40	30	60	220

**RECOMMENDATION**

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as an “administrative permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). However, since this will be included with the de minimis significant permit revision described above, a proposed permit incorporating both permit revisions will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). Upon completion of the EPA review period, a revised Section D of the facility permit will be issued with Permits to Operate for this press and the 7 inkjets. In addition the replaced press M6 and Mitsubishi GCX web press will be removed.